

AMENDMENTS TO THE CLAIMS

Please **AMEND** claims 1-9 as shown below.

The following is a complete list of all claims in this application.

- 1) (Currently Amended) An apparatus for the fabrication of structural members of metal matrix composites comprising:
- [[A)]] a planar surface;
- [[B)]] a carriage mechanism;
- [[C)]] a compaction device attached to said carriage mechanism so as to permit controlled relative movement between said compaction device and said planar surface;
- [[D)]] a metal matrix composite prepreg tape feeding mechanism that supplies metal matrix composite prepreg tape that addresses said planar surface to a junction between said planar surface and said compaction device as [[#]] said metal matrix composite prepreg tape enters said junction; and
- [[E)]] a laser generating [[an)]] a laser beam that impacts said metal matrix composite prepreg tape in said junction causing at least a surface of said metal matrix composite prepreg tape [[#]] to fuse as said metal matrix composite prepreg tape passes under said compaction device.
- 2) (Currently Amended) The apparatus of claim [[16]] 1 wherein said metal matrix composite prepreg tape comprises a matrix of aluminum or an aluminum alloy encompassing fibers selected from the group consisting of carbon, boron, ceramic and glass fibers.

- 3) (Currently Amended) The apparatus of claim [[17]] 1 said laser comprises a stacked multi-bar infrared laser.
- 4) (Currently Amended) The apparatus of claim [[17]] 3 wherein said stacked multi-bar infrared lase includes optical lenses that shape the infrared beam into a pattern that matches the cross sectional dimensions of said metal matrix composite prepreg tape.
- 5) (Currently Amended) The apparatus of claim [[16]] 1 wherein said planar surface and said compaction device both comprise the same or different ceramic materials.
- 6) (Currently Amended) The apparatus of claim [[16]] 1 further including preheaters that heat said metal matrix composite prepreg tape prior to entering said junction.
- 7) (Currently Amended) The apparatus of claim [[20]] 6 wherein said preheaters comprise infrared reflector lamps.
- 8) (Currently Amended) The apparatus of claim [[16]] 1 further including an optical pyrometer that addresses said junction and views said metal matrix composite prepreg tape in said junction and provides temperature feedback information for controlling the power of said laser or the relative movement of said planar surface and said compaction device.

[[23]] 9) (Currently Amended) The apparatus of claim [[16]] 1 further including a mechanism for inducing vibratory energy to said prepeg tape prior to entry into said junction at a frequency of between about 1000 and 25000 vibrations per minute.

AMENDMENTS TO THE SPECIFICATION

In the Specification:

Please **AMEND** the specification as shown in the following marked up paragraph, which shows changes made relative to the immediate prior version.

Please **INSERT** the following paragraph on page 1, at indicated line 5, above the “Field of the Invention.”

-- This invention was made with Government support under contract number F33615-99-C-5203 awarded by the Air Force. The Government has certain rights in the invention. --